

INJURY MORTALITY AMONG ARIZONA RESIDENTS



DROWNING DEATHS

ARIZONA,
1994-2004

Public Health Services
Bureau of Public Health Statistics
Health Status and Vital Statistics Section



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DROWNING DEATHS

ARIZONA, 1994-2004

BY

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February 2006

DROWNING DEATHS, ARIZONA, 1994-2004

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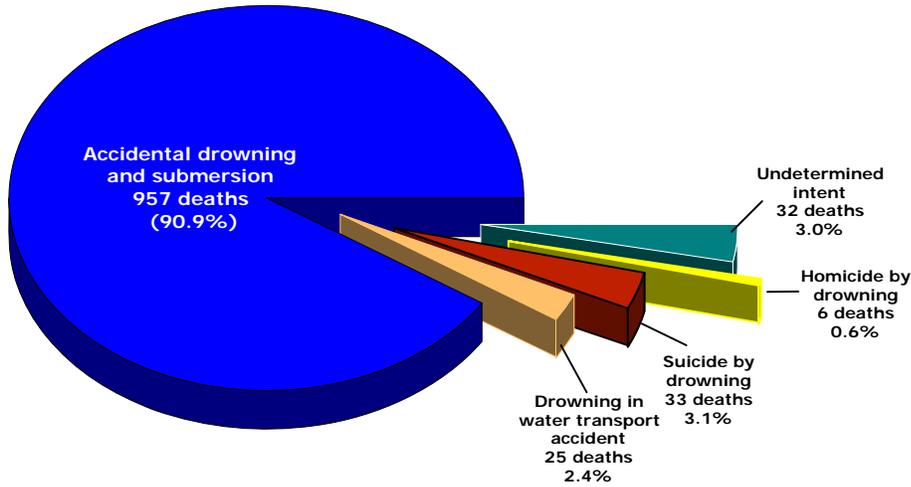
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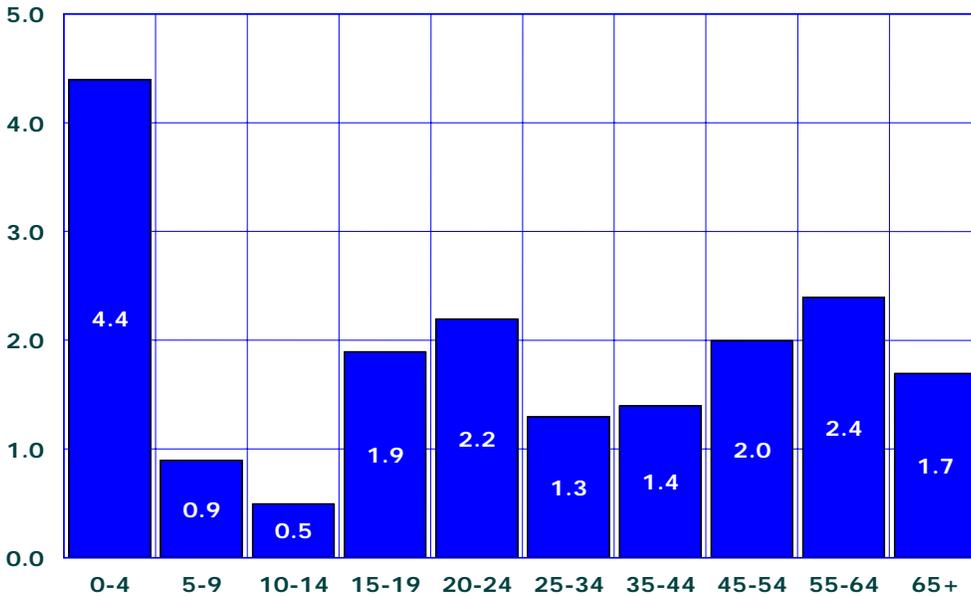
Figure 9-1
Average Annual Number and Percent of Drowning Deaths By Intent or Manner Among Arizona Residents: Eleven-Year Summary for 1994-2004

N = 1,053 total drowning deaths in 1994-2004



Among the 1,053 total drowning deaths among Arizona residents in 1994-2004, accidental drowning and submersion accounted for 90.9 percent of them (Figure 9-1, Table 9-1). The number of Arizonans who committed suicide by drowning (33 deaths) was greater than the number of those who drowned in a water transport accident (25 deaths). In the eleven years from 1994 to 2004, there were 6 homicides by drowning, and 32 deaths (3.0 percent) were undetermined whether the injury was accidentally or purposely inflicted.

Figure 9-2
Drowning Mortality Rates* by Age Group, Arizona Residents, 2004



*Number of drowning deaths per 100,000 population in specified group.

The 2004 drowning rate for children 4 years and younger (4.4 per 100,000, Figure 9-2, Table 9-3) was 2.4 times higher than the rate for persons of all ages (1.8 per 100,000).

The lowest age-specific drowning rates were those for children 5-14 years old.

DROWNING DEATHS, ARIZONA, 1994-2004

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Both nationally and in Arizona, the highest age-specific drowning rate is for children 1-4 years of age. In 2004, the drowning rate of 5.2/100,000 among Arizona preschoolers 1-4 years old was 2.9 times higher than the rate for persons of all ages (Figure 9-1).

The number of drowning deaths per 100,000 Arizona children 1-4 years old dropped for the third consecutive year from a recent high of 8.7/100,000 in 2001 to 5.2/100,000 in 2004. In contrast, the drowning rate for Arizonans of all ages increased for the second year from 1.3/100,000 in 2002, to 1.6/100,000 in 2003, and 1.8/100,000 in 2004.

Figure 9-3
Drowning Death Rates for Arizonans of All Ages and Children 0-4 and 1-4 Years Old, Arizona, 1994-2004

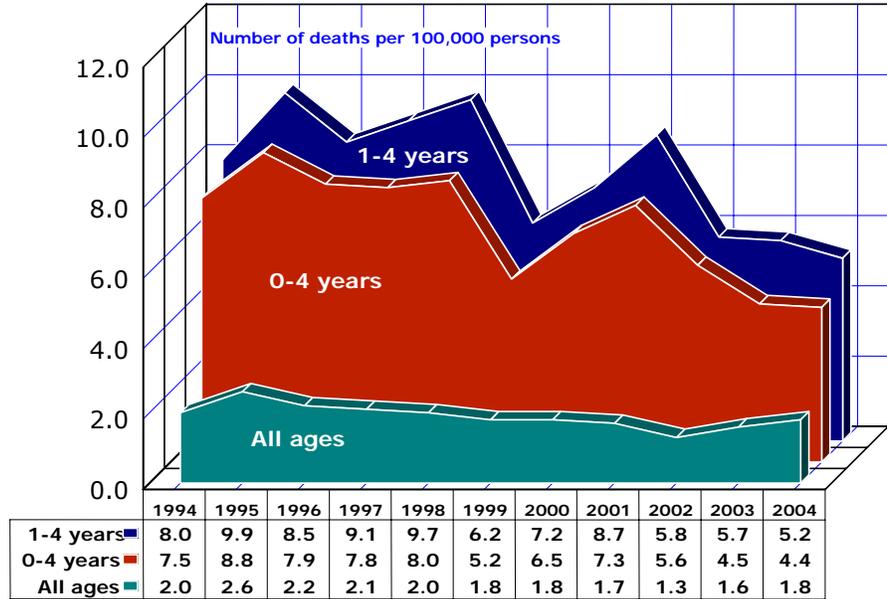
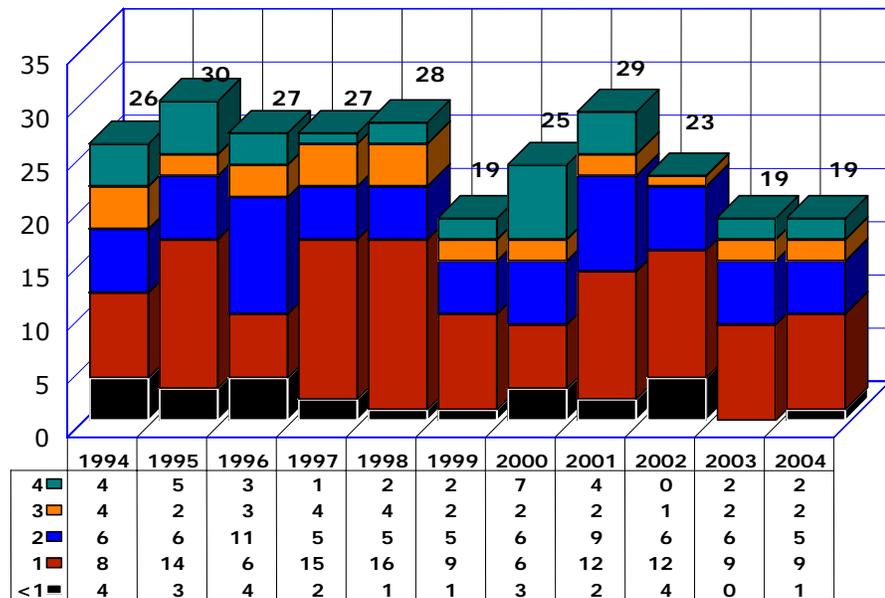


Figure 9-4
Drowning Deaths by Year Among Children 0-4 Years Old, Arizona, 1994-2004



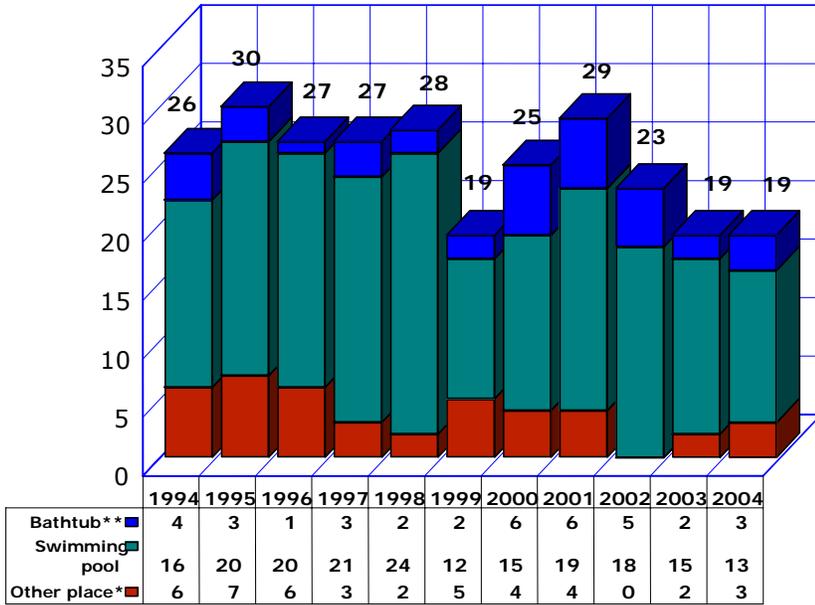
From 1994 to 2004, one year olds accounted for one out of two drowning deaths (116/247 or 47.0 percent) among preschoolers 1-4 years old.

There was one drowning fatality among infants under one year of age in 2004 (Figure 9-2).

DROWNING DEATHS, ARIZONA, 1994-2004

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Figure 9-5
Drowning by Place and Year Among Children 0-4 Years Old, Arizona, 1994-2004



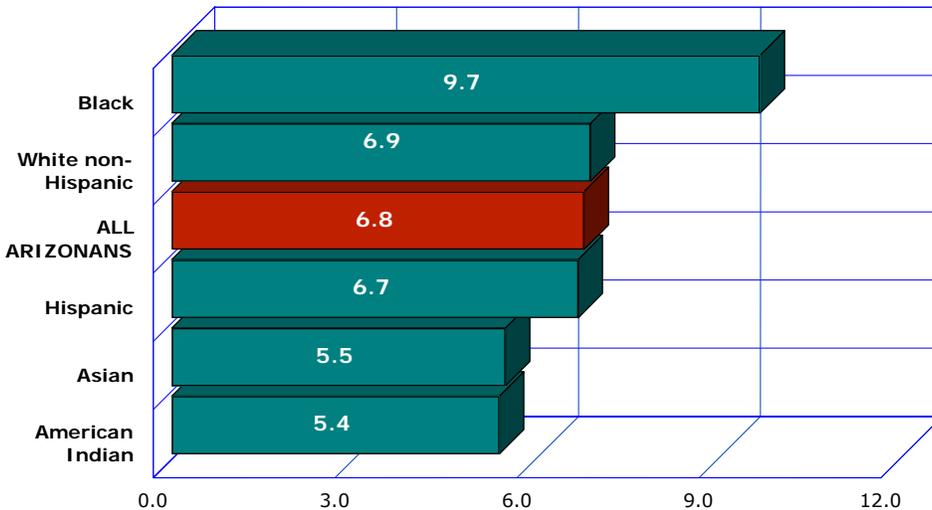
*Includes irrigation canals.

** Includes drowning in a bucket of water or jacuzzi.

Between 1994-2004, seven out of every ten children, 0-4 years old (71 percent), drowned in a swimming pool (Figure 9-5).

In 2004, children who resided in Maricopa County accounted for the 12 of 13 statewide swimming pool drowning deaths among children in this age group (Table 9-11).

Figure 9-6
Average Annual Mortality Rates for Accidental Drowning by Race/Ethnic Group Among Children 0-4 Years Old, Arizona, 1994-2004



Number of drowning deaths per 100,000 population in specified group per year from 1994 to 2004. The rates were computed using an 11-year total number of deaths for 1994-2004. The 1999 population figures by race/ethnicity (i.e., population at mid-point) multiplied by eleven were used as denominators.

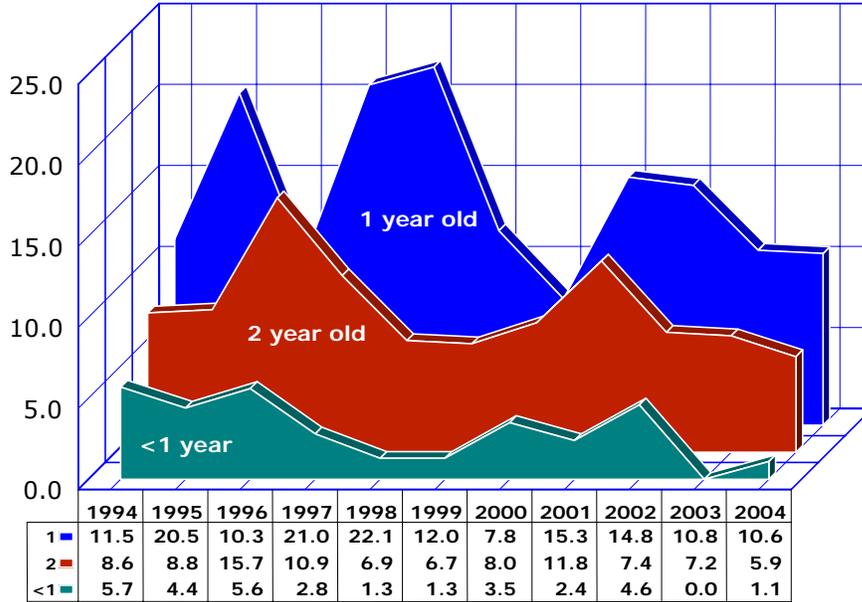
During 1994-2004, Black or African American children 0-4 years old had the highest average annual drowning mortality rate (9.7/100,000, Figure 9-6), followed by White non-Hispanic (6.9/100,000) and Hispanic or Latino children (6.7/100,000).

DROWNING DEATHS, ARIZONA, 1994-2004

KEY FINDINGS

Figure 9-7
Drowning Death Rates by Year and Age
Among Children 2 Years Old or Younger,
Arizona, 1994-2004

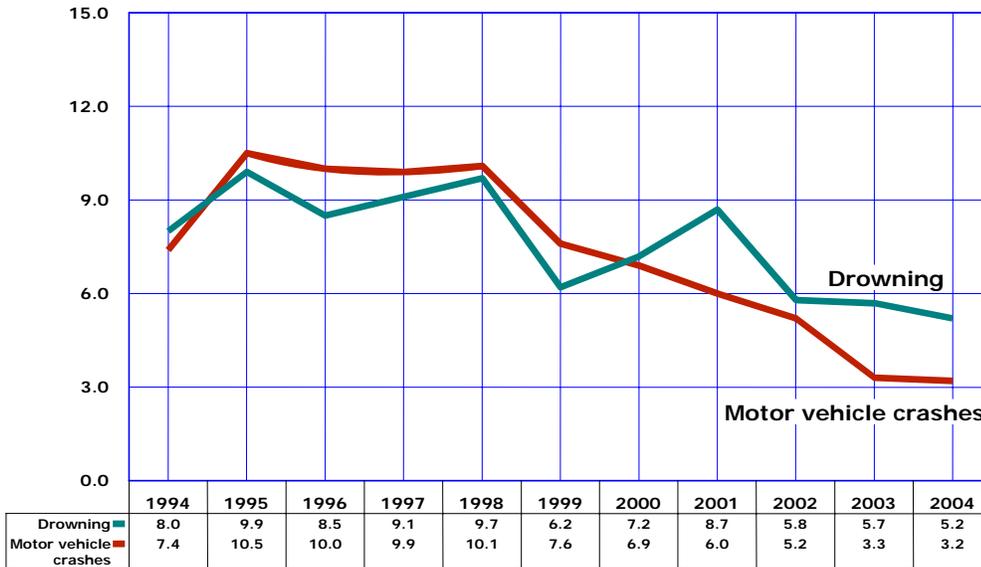
Number of drowning deaths per 100,000 children



Among children under 3 years of age, one year olds, followed by two year olds, continue to be at the highest risk for drowning death (Figure 9-7, Table 9-7).

Figure 9-8
Mortality Rates for Drowning and Motor Vehicle
Crashes Among Children 1-4 Years Old,
Arizona, 1994-2004

Number of deaths per 100,000 children 1-4 years old



Motor vehicle-related injuries were the leading cause of unintentional injury death among Arizona preschoolers (one to four year old children) in 5 of 11 years from 1994 to 2004 (Figure 9-8). However, unlike the drowning rate, the mortality rate for motor vehicle crashes declined for the sixth consecutive year from 10.1 deaths per 100,000 pre-schoolers in 1998 to 3.2/100,000 in 2004. All annual drowning rates from 2000 to 2004 were greater among children 1-4 years old in Arizona than their mortality rates for motor vehicle crashes.

**TABLE 9-1
DROWNING DEATHS BY INTENT AND YEAR, ARIZONA RESIDENTS, 1994-2004**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Accidental drowning and submersion (ICD-9 Code E910 / ICD-10 Codes W65-W74)	72	103	95	91	94	83	94	80	65	83	97
Drowning in water transport accident (ICD-9 Code E830, E832 / ICD-10 Codes V90, V92)	5	2	0	4	2	4	0	2	2	1	3
Assault (homicide) by drowning (ICD-9 Code E964 / ICD-10 Codes X92)	1	0	0	0	1	0	1	1	0	1	1
Intentional self-harm (suicide) by drowning (ICD-9 Code E954 / ICD-10 Codes X71)	4	1	2	3	1	2	3	1	5	4	7
Drowning and submersion, undetermined intent (ICD-9 Code E984 / ICD-10 Codes Y21)	2	2	2	3	3	1	0	7	3	4	5
TOTAL	84	108	99	101	101	90	98	91	75	93	113

Note: The Tenth Revision of the International Classification of Diseases (ICD-10) replaced the Ninth Revision (ICD-9) beginning with the 2000 data year.

**TABLE 9-2
DROWNING DEATHS* BY AGE GROUP AND YEAR, ARIZONA RESIDENTS, 1994-2004**

AGE GROUP	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0-4	26	30	27	27	28	19	25	29	23	19	19
5-9	6	7	2	5	3	2	7	5	2	3	4
10-14	0	5	3	2	3	2	1	2	1	2	2
15-19	5	8	7	9	4	2	7	5	6	4	8
20-24	9	13	12	3	4	5	6	6	4	12	9
25-29	5	11	7	4	4	3	6	6	3	4	5
30-34	4	4	4	9	3	7	4	3	2	2	6
35-39	3	5	6	9	10	6	6	8	4	5	4
40-44	3	7	3	8	9	6	4	2	4	6	8
45-49	3	6	4	4	6	12	2	4	4	9	7
50-54	4	1	4	3	4	7	5	4	6	5	7
55-59	2	1	0	1	3	2	2	2	1	5	5
60-64	0	3	1	2	4	3	5	3	0	1	7
65+	9	6	16	9	13	11	12	8	9	10	13
Unknown	0	0	1	3	1	1	2	2	1	1	1
Arizona, all ages	79	107	97	98	99	88	94	89	70	88	105

*For consistency with the previously published data, drowning in this table includes accidental drowning and submersion, drowning and submersion in water transport accidents, and drowning and submersion, undetermined intent.

TABLE 9-3
TOTAL AND AGE-SPECIFIC DROWNING RATES* BY YEAR, ARIZONA RESIDENTS, 1994-2004
AND UNITED STATES, 1994-2003

AGE GROUP	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
0-4	7.5	8.8	7.9	7.8	8.0	5.2	6.5	7.3	5.6	4.5	4.4
5-9	1.9	2.2	0.6	1.4	0.8	0.5	1.8	1.2	0.5	0.7	0.9
10-14	0.0	1.7	0.9	0.6	0.9	0.6	0.3	0.5	0.2	0.5	0.5
15-19	1.9	2.9	2.3	2.8	1.2	0.6	1.9	1.3	1.5	1.0	1.9
20-24	3.1	4.5	3.9	1.0	1.3	1.5	1.7	1.6	1.0	3.0	2.2
25-34	1.4	2.3	1.6	1.9	1.0	1.4	1.3	1.2	0.6	0.7	1.3
35-44	1.0	1.9	1.3	2.4	2.6	1.6	1.3	1.3	1.0	1.3	1.4
45-54	1.6	1.5	1.6	1.3	1.8	3.2	1.1	1.2	1.5	2.0	2.0
55-64	0.7	1.2	0.3	0.8	1.8	1.3	1.6	1.1	0.6	1.2	2.4
65+	1.7	1.0	2.6	1.4	2.0	1.6	1.8	1.2	1.3	1.4	1.7
Arizona, all ages	2.0	2.6	2.2	2.1	2.0	1.8	1.8	1.7	1.3	1.6	1.8
U.S., all ages	1.6	1.7	1.5	1.5	1.6	1.3	1.3	1.2	1.3	1.1	NA

*Number of drowning deaths per 100,000 population in specified group. The numerators include accidental drowning and submersion, drowning and submersion in water transport accidents, and drowning and submersion, undetermined intent (See Table 9-2).

**TABLE 9-4
DROWNING DEATHS BY RACE/ETHNICITY, GENDER AND YEAR, ARIZONA RESIDENTS, 1994-2004**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total	79	107	97	98	99	88	94	89	70	88	105
Male	52	87	69	72	78	66	68	62	48	72	74
Female	27	20	28	26	21	22	26	27	22	16	31
White non-Hispanic	47	64	63	60	63	56	52	57	45	48	63
Male	31	53	48	41	51	42	34	36	32	37	38
Female	16	11	15	19	12	14	18	21	13	11	25
Hispanic or Latino	19	27	22	15	21	16	21	21	19	26	25
Male	13	21	13	10	16	11	17	17	11	25	22
Female	6	6	9	5	5	5	4	4	8	1	3
Black or African American	5	3	4	6	2	3	6	3	1	6	7
Male	3	3	3	5	2	3	6	2	1	3	6
Female	2	0	1	1	0	0	0	1	0	3	1
American Indian or Alaska Native	8	11	7	16	10	12	13	3	3	7	8
Male	5	9	4	15	7	9	9	3	2	6	7
Female	3	2	3	1	3	3	4	0	1	1	1
Asian or Pacific Islander	0	2	1	0	3	0	1	4	2	1	2
Male	0	1	1	0	2	0	1	3	2	1	1
Female	0	1	0	0	1	0	0	1	0	0	1
Total	0	0	0	1	0	1	1	1	0	0	0
Male	0	0	0	1	0	1	1	1	0	0	0

**TABLE 9-5
DROWNING DEATHS OCCURRING IN ARIZONA* BY COUNTY OF OCCURRENCE AND AGE GROUP IN 2004**

County of Occurrence	TOTAL	Age Group														Unknown						
		<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64		65-69	70-74	75-79	80-84	85-89	90-94
	118	1	17	5	2	10	12	8	8	4	8	7	8	5	8	2	2	2	5	1	2	1
Cochise	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coconino	3	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0
Gila	2	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
Graham	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0
Maricopa	71	1	13	4	2	7	6	2	2	2	5	4	6	3	3	1	2	2	4	0	2	0
Mohave	9	0	0	0	0	1	1	1	2	1	0	1	1	0	1	0	0	0	0	0	0	0
Navajo	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pima	12	0	2	0	0	2	0	1	1	0	2	0	0	1	1	1	0	0	1	0	0	0
Pinal	5	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Santa Cruz	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Yavapai	3	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yuma	7	0	0	0	0	0	2	2	1	1	0	0	1	0	0	0	0	0	0	0	0	0
La Paz	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

*Includes 99 drowning deaths of Arizona residents and 19 drowning deaths of out-of-State residents.

**TABLE 9-6
DROWNING DEATHS AMONG ARIZONA RESIDENTS BY COUNTY OF OCCURRENCE AND AGE GROUP IN 2004**

	TOTAL	Age Group											
		<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	Unknown
TOTAL	105	1	18	6	17	11	12	14	12	3	7	3	1
Cochise	1	0	1	0	0	0	0	0	0	0	0	0	0
Coconino	2	0	0	0	0	0	1	0	1	0	0	0	0
Gila	2	0	0	0	0	0	0	1	1	0	0	0	0
Graham	2	0	0	0	0	0	0	0	1	0	0	1	0
Maricopa	68	1	13	5	12	4	7	10	6	2	6	2	0
Mohave	5	0	0	0	1	0	1	2	1	0	0	0	0
Navajo	1	0	0	0	1	0	0	0	0	0	0	0	0
Pima	11	0	2	0	1	2	2	0	2	1	1	0	0
Pinal	4	0	1	0	1	1	0	0	0	0	0	0	1
Yavapai	2	0	0	1	0	1	0	0	0	0	0	0	0
Yuma	1	0	0	0	0	0	1	0	0	0	0	0	0
Out-of-State	6	0	1	0	1	3	0	1	0	0	0	0	0

**TABLE 9-7
DROWNING DEATHS AND DROWNING RATES BY AGE AMONG CHILDREN 0-4 YEARS OLD, ARIZONA, 1994-2004**

Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Under 1	4	3	4	2	1	1	3	2	4	0	1
1	8	14	6	15	16	9	6	12	12	9	9
2	6	6	11	5	5	5	6	9	6	6	5
3	4	2	3	4	4	2	3	2	1	2	2
4	4	5	3	1	2	2	7	4	0	2	2
Subtotal, 1-4	22	27	23	25	27	18	22	27	19	19	18
Total, 0-4	26	30	27	27	28	19	25	29	23	19	19
Under 1	5.7	4.4	5.6	2.8	1.3	1.3	3.5	2.4	4.6	0.0	1.1
1	11.5	20.5	10.3	21.0	22.1	12.0	7.8	15.3	14.8	10.8	10.6
2	8.6	8.8	15.7	10.9	6.9	6.7	8.0	11.8	7.4	7.2	5.9
3	5.7	2.9	4.3	6.5	2.8	2.7	3.9	2.6	1.2	2.4	2.3
4	5.6	7.3	4.3	1.7	1.7	3.1	9.1	5.1	0.0	2.4	2.3
Subtotal, 1-4	8.0	9.9	8.5	9.1	9.7	6.2	7.2	8.7	5.8	5.7	5.2
Total, 0-4	7.5	8.8	7.9	7.8	8.0	5.2	6.5	7.3	5.6	4.5	4.4

* Per 100,000 population in specified group. For infants under 1 year of age, the number of births is used as the denominator.
reliable.

**TABLE 9-8
DROWNING DEATHS AMONG CHILDREN 0-4 YEARS OLD BY COUNTY OF RESIDENCE AND YEAR,
ARIZONA, 1994-2004**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total	26	30	27	27	28	19	25	29	23	19	19
Cochise	0	0	0	0	1	0	1	0	0	0	1
Coconino	1	1	0	0	0	1	0	0	0	0	0
Gila	0	0	0	0	1	0	0	0	0	0	0
Graham	0	1	0	0	0	0	0	0	0	0	0
Greenlee	0	0	0	0	0	0	0	1	0	0	0
Maricopa	17	16	18	23	19	13	18	25	18	15	14
Mohave	1	0	0	0	1	1	1	0	0	0	0
Navajo	0	1	3	0	1	0	0	0	0	0	0
Pima	6	4	2	2	4	2	3	3	4	1	2
Pinal	1	5	3	0	0	1	0	0	0	2	1
Yavapai	0	2	1	0	0	0	1	0	0	0	1
Yuma	0	0	0	0	0	1	1	0	1	1	0
Unknown	0	0	0	2	1	0	0	0	0	0	0

TABLE 9-9
DROWNING DEATHS AMONG CHILDREN 0-4 YEARS OLD BY MONTH AND YEAR, ARIZONA, 1994-2004

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total	26	30	27	27	28	19	25	29	23	19	19
Month of Death											
JANUARY	1	0	0	0	1	0	2	0	0	2	0
FEBRUARY	2	0	1	0	0	2	2	1	1	0	0
MARCH	0	4	0	3	1	2	2	1	2	0	2
APRIL	1	2	3	0	2	0	4	5	5	2	0
MAY	2	4	6	6	3	1	2	6	3	4	3
JUNE	2	5	6	4	4	7	2	2	2	1	4
JULY	3	5	3	3	6	3	5	3	2	3	6
AUGUST	3	4	3	4	5	3	3	6	0	5	2
SEPTEMBER	5	2	0	2	3	0	2	2	2	1	0
OCTOBER	5	1	2	3	1	1	0	2	2	0	2
NOVEMBER	0	1	2	0	0	0	0	0	2	1	0
DECEMBER	2	2	1	2	2	0	1	1	2	0	0

**TABLE 9-10
DROWNING DEATHS BY RACE/ETHNICITY, GENDER AND YEAR AMONG CHILDREN 0-4 YEARS OLD,
ARIZONA RESIDENTS, 1994-2004**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total, all groups											
Total	26	30	27	27	28	19	25	29	23	19	19
Male	11	21	13	15	18	11	14	15	13	12	12
Female	15	9	14	12	10	8	11	14	10	7	7
White non-Hispanic											
Total	13	13	16	18	16	8	15	16	11	10	10
Male	6	9	10	9	10	6	9	8	8	6	6
Female	7	4	6	9	6	2	6	8	3	4	4
Hispanic or Latino											
Total	9	10	6	8	9	8	6	8	10	6	6
Male	4	6	1	5	6	4	3	4	4	6	4
Female	5	4	5	3	3	4	3	4	6	0	2
Black or African American											
Total	3	1	2	1	1	0	2	2	1	3	1
Male	1	1	1	1	1	0	2	1	1	0	1
Female	2	0	1	0	0	0	0	1	0	3	0
American Indian or Alaska Native											
Total	1	6	3	0	1	3	2	0	1	0	1
Male	0	5	1	0	0	1	0	0	0	0	1
Female	1	1	2	0	1	2	2	0	1	0	0
Asian or Pacific Islander											
Total	0	0	0	0	1	0	0	3	0	0	1
Male	0	0	0	0	1	0	0	2	0	0	0
Female	0	0	0	0	0	0	0	1	0	0	1

**TABLE 9-11
DROWNING DEATHS AMONG CHILDREN 0-4 YEARS OLD BY PLACE
AND COUNTY OF RESIDENCE, ARIZONA, 2004**

County of residence	Total	Bathtub	Swimming pool	Other drowning and submersion
Total State	19	3	13	3
Cochise	1	1	0	0
Maricopa	14	1	12	1
Pima	2	0	0	2
Pinal	1	0	1	0
Yavapai	1	1	0	0

**TABLE 9-12
RESIDENT DROWNING DEATHS AND NON-RESIDENT DROWNING DEATHS
OCCURRING IN ARIZONA, 2004**

		AZ resident, died in AZ	AZ resident, died elsewhere	Non-resident, died in AZ
TOTAL		99	6	19
Age Group	<1	1	0	0
	1-4	17	1	0
	5-14	6	0	1
	15-24	16	1	6
	25-34	8	3	8
	35-44	12	0	0
	45-54	13	1	2
	55-64	12	0	1
	65+	13	0	1
	Unknown	1	0	0

Note: For consistency with the previously published data, drowning in this table includes accidental drowning and submersion, drowning and submersion in water transport accidents, and drowning and submersion, undetermined intent.